

PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

SERIES C. JOURNAL OF MEETINGS

VOLUME 23

No. 4, 1958

ORDINARY MEETING

WEDNESDAY, 4th JUNE, 1958, at 5.30 p.m.

AGENDA

1. Proceedings of the Ordinary Meeting held on 7th May, 1958.
2. Recommendations of candidates for Fellowship. First reading.
3. Recommendations of candidates for Fellowship. Second reading.
4. Announcement of election of new Fellows.
5. Additions to the Library [see p. 19].
6. Admission of Fellows.
7. Exhibits.
8. Communications.

Mr. W. Haufe (a visitor)

Two films produced by Science Service, Department of Agriculture,
Ottawa, Canada

1. The Biting Flies of Northern Canada.

[ABSTRACT].

A semi-documentary film on the biting fly problems typical of northern Canada, covering some of the investigations carried out by the Veterinary and Medical Entomology Unit for the National Defence Department from 1949-53. Some aspects of studies on the biology of mosquitoes, tabanids, and blackflies are covered, with special reference to the protection of military and civilian personnel in the subarctic wilderness. The film was produced for a dual purpose, as a documentary for military staff as well as a biological information film.

2. Pollination of alfalfa in Canada.

[ABSTRACT].

A film related to the agricultural problem of growing alfalfa seed on the Canadian prairies. Following the extension of irrigation in recent years, the aim of agricultural research has been to develop a balanced agricultural utilisation of the land, but introduction of new crops to the prairies has exposed unexpected problems. Alfalfa seed production is restricted by the availability of suitable insect pollinators and also by the lack of synchronisation between pollinator activity and the growth of the crop. The film shows some of the

pollinator activity as well as some of the ecological relationships that govern the activity. Special reference is made to the rôle of the leaf-cutter bees such as *Megachile* sp.

TEA will be served in the Library before the meeting.

NOTICES

Forthcoming Ordinary Meetings

2nd July, 1958

Dr. D. J. Lewis.—Some man-biting species of *Simulium*.

1st October, 1958

To be arranged.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 7TH MAY, 1958.

PROFESSOR O. W. RICHARDS, President, in the Chair.

Present 102 Fellows and 26 Visitors.

The President announced the death of Mr. R. W. Lloyd, elected in 1885 and an Honorary Fellow in 1944, a generous benefactor of the Society, to whom it was indebted for the ceiling and panelling of the Meeting Room and the Presidential dais and chair.

The minutes of the Ordinary Meeting held on 2nd April, 1958, were confirmed and signed by the President.

The names of the following candidates for election were read for the first time: Mr. Jack Goldsmith, B.Sc.; Mr. Amos Henry Henson; Mr. John Antony Cecil Howard, B.Sc.; Mr. Mohammad Rashid Khan; Mr. Muhammad Allahdad Khan; Major Duraiswamy Aiyar Narasimhan, A.M.C., B.Sc., M.B., B.S.; Mr. Ronald James Martin Skarratt; and Mr. Kenneth McCulloch Thomson.

For the second time (taken as read): Mr. John Albert Sydney Brasier, N.D.A.; Mr. John Hugh Brettell; Mr. Michael Gane; Mrs. Gouri Ganguly, M.Sc.; Mr. Ronald William Hodges, B.S., M.Sc.; Mr. Patrick Elliott Hulley; Dr. Vladimir Landa; Mr. Nitai Majumder, B.Sc.; Mr. Sankaranarayanan Sundararaman, B.Sc., M.Sc.; and Mr. Richard Thomas Thompson.

The Secretary read the names of the following newly elected Fellows of the Society: Miss Dorothy Susan Beales, B.Sc., 383 Hainton Avenue, Grimsby, Lincs.; Mr. Peter Robin Chadwick, M.A., Thorstone, Cotswold Mead, Painswick, Glos.; Mr. Salvina P. Farrugia, B.Pharm., 46 St. Publius Street, Rabat, Malta, G.C.; Mr. C. Garrett-Jones, World Health Organisation, Geneva, Switzerland; Mr. John Marsden Goldsmid, B.Sc., P.O. Box 548, East London, South Africa; Professor Khwaja Abdul Haque, Punjab Agricultural College, Lyallpur, Pakistan; Mr. Dennis Stanley Hill, B.Sc., The University, Hull; Mr. Philip Ernest King, B.Sc., The University, Hull; Dr. John Harold Mundie, Freshwater Biological Association, Ambleside, Westmorland; Dr. Eugene Gordon Munroe, Entomology Division, Department of Agriculture, Ottawa, Canada; Mr. Austin John Pontin, B.A., 15 Southdale Road, Oxford; Mr. Hafiz Abdul Quayyum, Punjab Agricultural College, Lyallpur, Pakistan; Mr. William Reed, 11 Wilberforce Road, Wisbech, Cambridge; Mr. Jaivant Bhalchandra Sardesai, M.Sc., Boca-da-Vaca, Cidade de Goa, Portuguese India; Dr. James Simpson, Rothamsted Experimental Station, Harpenden, Herts.; Mr. Robert Calder Sneddon, 3 Broom-

park Road, Eastcalders, Midlothian; Mr. Uma Shankar Srivastava, University of Allahabad, India; and Mr. Habib A. Zuberi, Laboratoire d'Évolution, 105 Boulevard Raspail, Paris VIe, France.

Thanks were voted to donors of gifts to the Library since the last meeting.

Miss R. M. Badcock, Mr. P. R. Chadwick, Dr. A. H. Newton, Dr. G. N. Philipson, Dr. D. G. Pollard and Mr. W. Reed signed the Obligation Book and were admitted Fellows of the Society.

The following papers, accepted for publication in the *Transactions*, were read in title:

"The escape responses shown by certain Aphids (Hemiptera-Homoptera) to the presence of the Coccinellid *Adalia decempunctata* L.," by A. F. G. Dixon. [Communicated by Professor G. C. Varley].

"Observations on the biology of *Caraphractus cinctus* Walker (Hymenoptera: Mymaridae), a parasitoid of the eggs of Dytiscidae," by D. J. Jackson.

"Cocoon building and the production of silk by the mature larva of *Dianous coerulescens* Gyll. (Coleoptera: Staphylinidae)," by M. F. Jenkins.

"A revision of the African *Zyras* Stephens (Coleoptera: Staphylinidae), subgenus *Parophtalmonia* Bernhauer," by H. R. Last.

"The estimation of numbers of mobile insects in low-incidence recapture data," by J. MacLeod.

"A synopsis of the African species of *Scelio* (Hymenoptera: Proctotrupoidea, Scelionidae)," by G. E. J. Nixon.

"The external morphology of some of the Dipterous larvae living in the Graminae of Britain," by I. W. B. Nye.

"Mallophagan parasites from Indian birds, Part V. Species belonging to the genus *Ibidoecus* Cummings, 1916 (Ischnocera)," by B. K. Tandan.

"A comparative study of the spiracular structure and mechanisms in some Hymenoptera," by G. T. Tonapi.

Dr. U. S. Srivastava exhibited a preparation of the prothoracic glands of *Tenebrio molitor* L. (Coleoptera: Tenebrionidae). So far in the Coleoptera, these glands have been described only by Nunez in 1954 in the Carabid *Anisotarsus cupripennis*. Stellwaag-Kittler, also in 1954, claimed to have found the prothoracic glands of *Tenebrio molitor*, but the structures which he described possess ducts and are really the salivary glands. The true prothoracic glands of *Tenebrio* larvae each consist of a band of cells attached at one end to a branch of the ventral tracheal trunk, at the other to the dorsal tracheal trunk, and also by a branch of the gland to the muscles and fat body laterally. In the well developed state, cells of the gland also form a sheath over the dorsal trunk. Broadly similar prothoracic glands have also been observed in the larvae of seven other species of beetles. The observations of Arvy and Gabe, in 1953, who suggest that a paired group of epithelial cells situated laterally in the head of *T. molitor* may correspond to the prothoracic glands of other Holometabola, are not confirmed.

Dr. G. N. Philipson set out a demonstration of larvae of *Hydropsyche instabilis* Curtis in a stirred aquarium. The larvae were living in a jam jar in which the water was kept in continuous circulation by means of a rotary stirrer. The larvae, which had built shelters and feeding nets, could be observed through a binocular microscope.

Dr. Philipson pointed out that larvae kept in still water will remain alive for considerable periods, but build shelters only, without feeding nets.

In addition to its importance in net construction, water flow is also of importance in its effect on oxygen availability. Thus *Hydropsyche instabilis* larvae are immobilised in standing water at a dissolved oxygen concentration of about 3.3 ml./l, but are still active at this concentration in water stirred at a speed giving a rate of flow of about 20 cm./sec. at the walls of the jar. At this

rate of flow they are not immobilised until the oxygen concentrations falls to about 0.9 ml./l.

In congratulating Dr. Philipson on devising such a simple method of achieving an object in which numerous complications were involved, Dr. K. Mellanby asked whether if an irregularly shaped container were used, with consequently different rates of circulation, the insects distributed themselves into the appropriate zone. Dr. Philipson replied that in the only one of his experiments which threw any light on this, the larvae were in a shallow dish, with the water stirred slowly, and they congregated in the centre where the agitation was greatest.

In reply to an enquiry by Dr. H. E. Hinton, Dr. Philipson said he had no information on stridulation in these larvae.

Dr. Hickin recalled that during a visit to Uganda in 1954 he was able to rear a number of species of Caddis larvae successfully under tropical conditions by directing a current of air to make the water swirl.

Professor V. B. Wigglesworth gave a paper on recent work on the juvenile hormone, an abstract of which appeared on page 11.

In the discussion which followed, Professor Wigglesworth said, in reply to an enquiry by the President, that abrasion of the pupa did not result in malformation of the adult.

Dr. T. R. E. Southwood asked if there was any explanation as to why the extracts injected into *Rhodnius* had no effect on the cuticle at the point of injection. Professor Wigglesworth replied that his own injections were done through the leg with no effect, whereas Dr. Carroll Williams had had good results with injections in the abdomen, and it was difficult to see where the difference lay.

Dr. Mellanby having asked if there was any way of getting the hormone to circulate, Professor Wigglesworth said some success had been obtained with casein emulsion, but it did eventually break down.

Mr. H. L. G. Stroyan, referring to Professor Wigglesworth's experiment with *Pieris* pupae, asked whether, in view of the concentration of the hormone in the abdomen of the male only in *Cecropia*, there might not also in the abdomen of male *Pieris* be some similar substance which acted against it, thus causing the apparent lack of effect. Professor Wigglesworth replied that he had treated both sexes with the same effect.

In reply to a question by the President, Professor Wigglesworth said he understood research was going on in America to identify the chemical components of the hormone.

Dr. B. R. Laurence showed a colour film on the breeding places of *Mansonioides* mosquitoes in the Gambia, an abstract of which appeared on page 11.

In reply to an enquiry by Dr. Hinton, Dr. Laurence said he had found no root-piercing insects, other than the *Mansonioides* and an Ephydrid, in the aquatic plants.

The President having asked if *Mansonioides* was disease carrying, Dr. Laurence confirmed that this was so.

Mr. P. F. Mattingly added that it had been suggested as a possible vector of yellow fever, but it was so abundant and such a vicious biter that it was difficult to believe this. Its appearance was "mimicked" by certain species of *Aedes* and two of these had been shown also to resemble it in the swarming habits of the males. He went on to give some account of the occurrence of *Mansonioides* in Nigeria.

In reply to an enquiry by Dr. D. J. Lewis, Dr. Laurence said that *Mansonioides* must have a blood meal before laying and that immediately after each oviposition it was again ready to feed on blood.

PAUL FREEMAN, *Honorary Secretary.*

ADDITIONS TO THE LIBRARY

Presented

- André, M. Acariens Thrombidions (adultes) de l'Angola. *Publ. cult. Cia. Diamant. Angola* **35** : 1-125. 1958. [The Publishers.]
- Cott, H. E. Systematics of the suborder Tubulifera (Thysanoptera) in California. *Univ. Calif. Publ. Ent.* **13** : 1-216. 1956. [The Publishers.]
- Evans, H. E. *Studies on the comparative ethology of the Digger wasps of the genus Bembix*. 8vo. Ithaca, N.Y. : Comstock Publ. Assoc. ; London : Constable, 1957, 1958. [Constable.]
- Great Britain. Ministry of Agriculture, Fisheries and Food. *Bulletin* **162**. *Sugar beet pests* : F. G. W. Jones. 8vo. London : H.M.S.O., 1957. [The Publishers.]
- Hardwick, D. F. Taxonomy, life history and habits of the ellipsoid-eyed species of *Schinia* (Lep. Noctuidae). *Canad. Ent. Suppl.* **6** : 1-116, 1958. [By Exchange.]
- Langston, R. I. A synopsis of Hymenopterous parasites of *Malacosoma* in California (Lep. Lasiocampidae). *Univ. Calif. Publ. Ent.* **14** (1) : 1-50, 1957. [The Publishers.]
- Stannard, L. J. *The phylogeny and classification of the North American genera of the suborder Tubulifera (Thysanoptera)*. 8vo. Urbana : Univ. Illinois Pr., 1957. [*Illinois Biol. Monogr.* **25**.] [The Publishers.]
- Williams, C. B. *Insect migration*. 8vo. London : Collins, 1958. [*The New Naturalist*.] [The Publishers.]

Purchased

- Carthy, J. D. *Animal navigation*. 8vo. London : Allen & Unwin, 1956.
- Danmarks Fauna*. Udgivet af Dansk Naturhistorisk Forening. 8vo. København : Gads Forlag, 1907—
- Bd. 60. *Lopper (Siphonaptera)* : F. G. A. M. Smit. 1954.
- Bd. 61. *Sommerfugle VIII. (Lep. : Tortricina)* : W. Van Deurs. 1956.
- Bd. 62. *Biller XVIII. (Col. : Scolytidae and Platypodidae)* : V. Hansen. Biologisk afsnit, ved B. Petersen. 1956.
- Bd. 63. *Biller XIX. Almindelig del. Larveafsnittet*, ved Sv. G. Larsson. 1957.
- Engel, E. O., ed. *Mittleuropäische Insekten*. [192 pls. (col.) with descriptive letterpress.] 8vo. Hamburg : Cramer, 1956-57.
- Insects of Micronesia*. Vol. 3 (3). *Acarina : Ixodoidea*. By G. M. Kohls. 8vo. Honolulu : Bishop Museum, 1957.
- Miller, D. *Native insects*. 8vo. Wellington : Reed, 1955. [*Nature in New Zealand*.]
- [Spuris, Z. D. *The dragonflies of Latvia*.] 8vo. Riga : Latvijas PSR, Zinatnu Akad. Biol. Inst., 1956. [*In Russian*.]
- Stach, J. C. *The apterygotan fauna of Poland*. VII. *Neelidae and Dicyrtomidae*. 8vo. Krakow : Polska Akad. Nauk, 1957.

In addition, separates have been presented by Dr. R. C. Rainey ; Companhia de Diamantes de l'Angola ; Dr. J. L. Cloudsley-Thompson ; Mr. J. R. G. Sutherland ; Director, E.A.T.R.O., Tororo ; Commonwealth Institute of Entomology ; Mr. G. R. Shidrawi ; Mr. J. C. Bradley ; Department of Zoology, Glasgow University ; Mr. J. E. H. Blackie ; Department of Zoology, Durham University ; Mr. J. S. Taylor ; Mr. W. V. Harris and Dr. T. Clay.

NOTICES

In addition to the *Transactions and Proceedings* (Series A, B, and C), the following publications are available on application at the Society's rooms:—

THE GENERIC NAMES OF BRITISH INSECTS, WITH CHECK LISTS OF THE SPECIES, prepared by the Committee on Generic Nomenclature of the Royal Entomological Society of London with the assistance of the Department of Entomology of the British Museum (Natural History):—

Part 1. Recommendations relating to the publication of the Committee's									
Reports									Price
2.	Rhopalocera	..	..	..	..	..	..	..	6d.
3.	Odonata	..	..	..	..	..	..	..	3s. 6d.
4.	Neuroptera	..	..	..	..	..	..	..	3s. 6d.
5.	Hymenoptera Aculeata	..	..	..	..	..	..	..	15s. 0d.
6.	Coleoptera Carabidae	..	..	..	..	..	..	..	10s. 0d.
7.	Coleoptera Hydradephaga	..	..	..	..	..	..	..	5s. 0d.
8.	Hemiptera Heteroptera	..	..	..	..	..	..	..	39s. 0d.
9.	Coleoptera Staphylinidae	..	..	..	..	..	..	..	40s. 0d.

HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS.

The Society has undertaken the issue of a series of publications intended to provide illustrated Keys to the whole of the British Insect Fauna so far as this is possible.

It is proposed to cover this field in a series of ten volumes, arranged as follows:—

- | | |
|---|------------------------|
| I. Part 1. General Introduction. | Part 9. Ephemeroptera. |
| 2. Thysanura. | 10. Odonata. |
| 3. Protura. | 11. Thysanoptera. |
| 4. Collembola. | 12. Neuroptera. |
| 5. Dermaptera and Orthoptera. | 13. Mecoptera. |
| 6. Plecoptera. | 14. Trichoptera. |
| 7. Psocoptera. | 15. Strepsiptera. |
| 8. Anoplura. | 16. Siphonaptera. |
| II. Hemiptera. III. Lepidoptera. IV and V. Coleoptera. | |
| VI. Hymenoptera: Symphyta and Aculeata. | |
| VII. Hymenoptera: Ichneumonidea. | |
| VIII. Hymenoptera: Cynipoidea, Chalcidoidea and Serphoidea. | |
| IX. Diptera: Nematocera and Brachycera. X. Diptera: Cyclorrhapha. | |

The following parts are now available:—

- Vol. I, Part 2. Thysanura and Diplura. By M. J. Delany. Price 2s. 6d. plus postage.
- Vol. I, Part 5. Dermaptera and Orthoptera. By W. D. Hincks. Second edn. Price 6s. 0d. plus postage.
- Vol. I, Part 6. Plecoptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 9. Ephemeroptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 10. Odonata. By F. C. Fraser. Second edn. Price 10s. 0d. plus postage.
- Vol. I, Part 16. Siphonaptera. By F. G. A. M. Smit. Price 20s. plus postage.
- Vol. IV, Part 1. Coleoptera: Introduction and Key to Families. By R. A. Crowson. Price 10s. plus postage.
- Vol. IV, Part 3. Coleoptera, Hydradephaga. By F. Balfour-Browne. Price 6s. plus postage.
- Vol. IV, Part 8a. Coleoptera: Staphylinidae (part). By C. E. Tottenham. Price 15s. 0d. plus postage.
- Vol. IV, Part 9. Coleoptera: Pselaphidae. By E. J. Pearce. Price 6s. plus postage.
- Vol. V, Part 7. Coleoptera: Coccinellidae and Sphindidae. By R. D. Pope. Price 2s. 6d. plus postage.
- Vol. V, Part 9. Coleoptera: Lagriidae to Meloidae. By F. D. Buck. Price 6s. plus postage.
- Vol. V, Part 11. Coleoptera: Scarabaeoidea. By E. B. Britton. 7s. 6d. plus postage.
- Vol. V, Part 12. Coleoptera: Cerambycidae. By E. A. J. Duffy. Price 3s. 6d. plus postage.
- Vol. V, Part 15. Coleoptera: Scolytidae and Platypodidae. By E. A. J. Duffy. Price 3s. 6d. plus postage.
- Vol. VI, Part 1. Hymenoptera: Introduction and Key to Families. By O. W. Richards. Price 20s. plus postage.
- Vol. VI, Part 2a. Hymenoptera: Symphyta (part). By R. B. Benson. Price 10s. 0d. plus postage.
- Vol. VI, Part 2b. Hymenoptera: Symphyta (contd.). By R. B. Benson. Price 15s. 0d. plus postage.
- Vol. VIII, Part 3d. Hymenoptera: Proctotrupoidea (part). By G. E. J. Nixon. Price 20s. 0d. plus postage.
- Vol. IX, Part 1. Diptera: Introduction and Key to Families. By H. Oldroyd. Second edn. Price 7s. 6d. plus postage.
- Vol. IX, Part 2. Diptera, Nematocera: Families TIPULIDAE to CHIRONOMIDAE. By R. L. Coe, Paul Freeman and P. F. Mattingly. Price 20s. 0d. plus postage.
- Vol. X, Part 1. Diptera: Syrphidae. By R. L. Coe. Price 17s. 6d. plus postage.
- Vol. X, Part 4a. Diptera: Cyclorrhapha (part). By F. I. van Emden. Price 20s. 0d. plus postage.

Orders for the complete series or for separate parts can be placed with the Registrar at the Society's rooms now, but prices can only be quoted for those parts already issued.

Fellows of the Society may purchase one copy at a discount of 25 per cent.; additional copies at the full published price.